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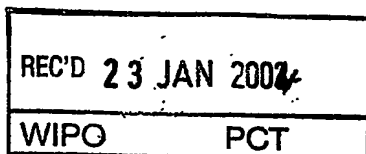
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2. Patent Application number
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B&Q PLC
Portswood House, 1 Hampshire Corporate Park
Chandler's Ford, Eastleigh
Hampshire, SO53 3YX

Patents ADP Number (if you know it)

8242141001

If the applicant is a corporate body, give the country/state of its incorporation

England & Wales

4. Title of the invention Saw Blade Support

5. Name of your agent (if you have one)

Fry Heath & Spence LLP

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

The Gables, Massetts Road
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Number of earlier application

Date of filing
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Description 10
 Claim(s) 5
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 Translations of priority documents Nil
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 Request for preliminary examination and search (*Patents form 9/77*) One
 Request for substantive examination (*Patents form 10/77*) Nil
 Any other documents (please specify) Nil

11. I/We request the grant of a patent on the basis of this application.

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Date

Anthony Clayton-Hathway

14 November 2002

12. Name and daytime telephone number of person to contact in the United Kingdom Anthony Clayton-Hathway 01865 841060

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Saw Blade Support

The present invention relates to saws, and especially saws that operate by a reciprocating action, both manual saws and powered saws.

A standard manual wood saw comprising a long toothed blade attached to a handle is extremely effective at making deep cuts in wood or other articles to be sawn. However, it is well known that due to the flexibility of the saw blade, accuracy and speed of cutting can be difficult with such saws. The tenon saw solves the problem of the flexing of the saw blade by the provision of a stiff metal back to the blade which prevents the blade from flexing. However, the tenon saw has the problem that the stiff back of the blade, being significantly wider than the blade itself, prevents the blade penetrating fully into an article being sawn when deep cuts need to be made.

The present invention seeks to enable a saw to make deep cuts into an article while also reducing the flexing of the blade, thereby improving the speed and accuracy with which the saw may be used.

Accordingly, a first aspect of the invention provides a saw blade support that can be located on the blade of a saw to reduce flexing of the blade in use, at least part of the support being removable from the blade to facilitate the penetration of the blade into an article being sawn.

A second aspect of the invention provides a saw comprising a saw blade and a saw blade support that can be located on the blade to reduce flexing of the blade in use, at least part of the support being removable from the blade to facilitate the penetration of the blade into an article being sawn.

A third aspect of the invention provides a kit of parts comprising a plurality of supports according to the first aspect of the invention, and optionally a saw comprising a saw blade on which one or more of the supports at a time may be located. Preferably each of the supports is different (for example in length) to the (or each) other support.

Reference, in this specification, to "the support" is intended to include a reference to each support of a kit according to the third aspect of the invention (as well as referring to the support of a saw according to the second aspect of the invention).

The invention ingeniously provides the advantages of a standard wood saw (for example) with the advantages of a tenon saw, while substantially eliminating the drawbacks of both.

The saw preferably comprises a handle to which the saw blade is attached. Preferably the saw comprises a handsaw (for example a wood saw or the like).

Alternatively, the saw may comprise a powered saw in which the saw blade performs a reciprocating motion in use. The powered saw (which may be cordless – i.e. including its own source of power – or mains powered) preferably includes a main body containing a motor that powers the saw blade.

The support, which preferably is elongate in shape, is preferably substantially rigid. It is preferably formed from a plastics material (for example polypropylene or polyethylene) and/or metal (for example aluminium or steel). The support may be formed by being moulded, cast, extruded, sintered, etc.

The support preferably includes attachment means by which the support is attached or attachable to the saw. The support may be attached or attachable to the handle and/or the main body and/or the blade, of the saw.

The support may be arranged such that it is attached to the saw at the commencement of sawing through an article so that the blade is substantially prevented from flexing during the initial stages of sawing, thereby enabling accurate and fast sawing. As the saw blade penetrates the article being sawn, the support may be arranged to be removed entirely from the saw, to avoid the support preventing the blade penetrating sufficiently into the article. In such embodiments, the support may be attachable to the saw via the blade and/or the handle and/or the main body (where present). Preferably, however, in such embodiments the support is attachable to the saw only via attachment to the blade of the saw (the saw in such cases preferably is a handsaw rather than a powered saw). In such embodiments, therefore, the attachment means and the support means (described below) of the support preferably are one and the same thing.

In particularly preferred embodiments, however, the support is pivotably attached or attachable to the saw. Advantageously, the removal of at least part of the support from the blade to facilitate the penetration of the blade into an article being sawn comprises pivoting of the support with respect to the blade. Most preferably, the support is pivotable with respect to the blade such that as the blade penetrates an article being sawn in use, the support rests on the exterior of the article. It is preferred for the support to pivot from the handle or the main body of the saw, or from an end region of the saw blade adjacent to the handle or main body, but in general the support could pivot from substantially any part of the saw. The support may pivot about a hinge or other pivot. Alternatively, the support may be

pivotably attached or attachable to the saw by means of a flexible portion by which the support may pivot with respect to the saw blade.

The support or saw may include a resilient part, preferably a spring, by which the support is biased to be located on the blade of the saw in use. In this way, for example, it may be ensured that the support provides as much anti-flexing support to the blade as possible, even as the blade penetrates the article being sawn and hence begins to be removed from part of the blade. The support preferably is located on the upper edge of the saw blade, and hence alternatively this may simply be achieved by the weight of the support.

In some embodiments of the invention, part of the support may remain located on the blade (to support the blade) while another part of the support is removed from the blade to facilitate the penetration of the blade into the article being sawn. Advantageously, in such embodiments the support is removed from an end of the blade furthest from the handle (or main body) before it is removed from the opposite end of the blade nearest to the handle (or main body). For this reason (for example) the support may include a plurality of pivots such that sections of the support may pivot with respect to the blade. Alternatively, the support may comprise a plurality of parts pivotable from the same pivot point, each part having a different length to that or the (or each) other part. In other embodiments the support may be attachable to, and pivotable with respect to, the saw at any of a plurality of pivot points situated on (preferably along) the handle and/or the blade of the saw (and/or the main body of the saw, for those embodiments including a main body).

The support preferably includes a support means that supports the blade in use, thereby reducing flexing of the blade. The support means preferably comprises a pair of spaced apart sidewalls defining a slot in

which a longitudinal edge of the blade is contained when the support is located on the blade. The longitudinal edge of the blade preferably is a tight fit in the slot (but, at least in the broadest aspects of the invention there need not be a tight fit between the blade and the slot, as long as the support reduces the ability of the blade to flex). In some preferred embodiments, the slot includes one or more ribs that support the blade when the support is located on the blade. Additionally or alternatively the support may be located on the blade by means of a magnetic attachment, by means of cam action clips, or any other suitable attachment.

Other types of support means are, however, possible. For example, the support means may comprise a framework (e.g. a "space frame") that is locatable on the blade. Advantageously, the support means of the support may comprise one or more elongate members arranged to extend along one or both opposite faces of at least part of the length of the blade. The (or each) elongate member may be locatable on the blade simply by means of its attachment to the saw; for example, the (or each) elongate member may be pivotably attached (or attachable) to the saw in such a way that the elongate member extends along side the blade, and for example is held in place by its own weight. Additionally or alternatively there may be some other form of attachment of the (or each) elongate member to the saw, for example it may be locatable on the saw blade by means of a magnetic attachment to the blade.

Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings, of which:

Figures 1 and 2 show two embodiments of non-pivoting saw blade support according to the invention, used in conjunction with a handsaw;

Figures 3 to 7 show various embodiments of pivoting saw blade supports according to the invention, used in conjunction with a handsaw;

Figure 8 shows an embodiment of a double-sided tenon saw with removable support in accordance with the invention;

Figure 9 shows two views of an embodiment of a saw blade support according to the invention in conjunction with a powered reciprocating saw; and

Figure 10 shows two views of a handsaw having a support in the form of a pair of elongate members pivotably extending along opposite faces of the blade of the saw.

Figure 1 shows a conventional handsaw 1 comprising a handle 3 and a planar saw blade 5 attached thereto. The blade 5 has a lower longitudinal cutting edge 7 provided with saw teeth (not shown, for simplicity). The upper (or back) longitudinal edge 8 of the saw blade has a support 9 according to the invention partially located thereon. The support 9 is elongate and substantially rigid, and preferably is moulded from a plastics material (e.g. polypropylene or polyethylene).

The support 9 comprises a pair of spaced apart sidewalls 11 defining a slot 13 in which the upper longitudinal edge 8 of the saw blade is contained when the support is located on the blade. The support preferably is a tight (interference) fit in the slot 13, and is locatable on, and removable from the blade manually. Additionally or alternatively the support may be located on the blade by means of a magnetic attachment, by means of cam action clips, or any other suitable attachment. It will be appreciated that the support 9 provides rigidity (especially longitudinal rigidity) to the blade when the saw is used to cut into an article (for example a piece of wood). Advantageously, the support 9 substantially prevents longitudinal flexing of

the blade 5 when the initial cuts into the article are made, thereby enhancing the speed and accuracy with which the saw may be used. Once the saw has cut deeply into the article, and an upper portion of the blade (and especially the upper edge 8) needs to penetrate into the article, the support 9 may simply be removed from the blade by the user to facilitate this. The saw with the removable support according to the invention therefore combines the advantages of a conventional wood saw and a conventional tenon saw, while avoiding the drawbacks of both.

Figure 2 shows a variation on the Figure 1 embodiment in which the support 9 is retained on the blade 5 by means of two inwardly-biased flexible members 15 of the longitudinally opposite ends of the support, that carry inwardly-facing projections (not shown) arranged to interlock with apertures 17 provided in the saw blade.

The two views (a and b) of Figure 3 show an alternative embodiment of handsaw 1 in accordance with the invention. In this embodiment, the support 9 is pivotally attached to the saw. The pivotal attachment is by means of a pivot 19 located at the handle end of the saw blade 5, adjacent to the upper edge 8 of the blade. The pivotal attachment of the support 9 to the saw 1 enables at least part of the support to be removed from the saw blade to facilitate the penetration of the blade into an article 21 being sawn, by rotation of the support 9 away from the blade. In particular, the more deeply the blade 5 penetrates into the article 21 being sawn, the further does the support 9 rotate away from the blade at any particular point in the reciprocating (sawing) motion of the blade. The support 9 rests on an upper surface of the article 21 being sawn, as the blade penetrates deeper into the article. This may simply be due to the weight of the support, or a resilient part (preferably a spring) may be provided between the support and the blade, to bias the support towards the blade. This has the advantage of

ensuring that the support provides the greatest extent possible of anti-flexing support to the blade at all times.

It will be noticed that a lower leading edge 23 of the pivotally attached support 9 is bevelled to facilitate a smooth passage of the support 9 over the article 21 being sawn.

Figure 4 shows a variation on the embodiment of Figure 3, in which the support is pivotally attached to the saw via the handle 3. Also shown are ribs 25 provided on the internal surfaces of the sidewalls 11 of the support 9 in the slot 13. The ribs 25 enable the slot 13 to be significantly wider than the blade 5, thereby facilitating easy location and removal of the support 9 on the blade, while providing anti-flexing support to the blade, since the ribs themselves preferably are a snug-fit against the blade.

Figure 5 shows a further variation in which the support 9 is divided into two sections 27a and 27b by a further pivot 29 provided part way along the support 9. This enables the front section 27a to rotate away from the blade 5 while the rear section 27b remains located on the blade, thereby maximising the degree of support provided by the blade as the blade cuts into an article. The support may be divided into two, three, or more sections in this way.

Figure 6 shows another variation on this theme, in which the support comprises a plurality (two as shown) of parts, 31a and 31b, that pivot from the same pivot point 19, each part having a different length to that of the (or each) other part. This enables the (or each) shorter part to remain located on the blade while the longer part(s) is/are rotated away from the blade.

Figure 7 shows a partial view of an embodiment of the invention in which the pivotal attachment of the support is via a flexible portion 33 of the support.

Figure 8 shows an embodiment of the invention in which the blade 5 of the saw 1 has two cutting edges 7a and 7b provided on opposite longitudinal edges of the blade 5, the support being locatable on either of the two cutting edges of the blade in order to support the blade while the other cutting edge is used to saw an article. Advantageously, as shown, the two cutting edges 7a and 7b of the saw blade may have differing teeth sizes, for example relatively small teeth for fine work and relatively large teeth for when larger cuts need to be made.

In the embodiment shown in Figure 8, the support 9 is attachable to the saw 1 via interlocking arms 35 and grooves 37, by which the support 9 rotates into interlocking engagement with the handle 3 of the saw 1. Additionally, a projection 39 on the support may interlock with a respective recess 41 at the opposite end of the saw blade 5 to prevent the support from rotating with respect to the blade. Alternatively, in order to enable such rotation, the projection 39 may simply be released from the recess 41.

The Figure 8 embodiment of the invention is, in effect, a double-sided tenon saw with a removable support. Additionally (and optionally) the support may be pivotally attached to the saw (i.e. when the projection 39 is released from the recess 41).

The two views (a and b) of Figure 9 illustrate the use of a support according to the invention with an electrically powered reciprocating saw 43. The saw 43 comprises a main body 45 housing a motor (not shown). The main body 45 includes a handle 47, an actuating trigger 49, a battery pack 51 and a handgrip 53. A forwardly-mounted saw blade 55 performs a

forward-and-back reciprocating sawing motion under the power of the motor. Pivotaly attached to the main body 45 is a support 9 which (as shown in view (a)) locates on the saw blade 55 to prevent it flexing, and (as shown in view (b)) may rotate away from the saw blade to allow the blade to penetrate an article being sawn.

Similarly to the embodiments shown in figures 5 and 6 the support used with a powered saw may be articulated and/or comprise a plurality of parts, for example. Whichever type of support is used, however, it preferably includes friction-reducing means (for example a polytetrafluoroethylene coating or insert(s)) to allow a smooth reciprocating motion by the blade with respect to the support.

The two views ((a) and (b)) of Figure 10 show a handsaw 1 having pivotably attached thereto a support 9 comprising a pair of elongate members 57 extending along opposite longitudinal faces of the saw blade 5. The two elongate members are independently pivotable with respect to the saw blade, as shown by view 10(b). When the elongate members 57 are located on the blade 5, they rest on a part 59 of the handle of the saw and extend along the faces of the blade. Additionally, or alternatively there may be a form of attachment between the elongate member(s) 57 and the blade 5 that facilitates the location of the elongate member(s) on the blade. For example, the elongate member(s) 57 may include one or more magnets that enable a magnetic attachment of the elongate member(s) to the blade.

Claims

1. A saw blade support that can be located on the blade of a saw to reduce flexing of the blade in use, at least part of the support being removable from the blade to facilitate the penetration of the blade into an article being sawn.
2. A saw comprising a saw blade and a saw blade support that can be located on the blade to reduce flexing of the blade in use, at least part of the support being removable from the blade to facilitate the penetration of the blade into an article being sawn.
3. A support or saw according to claim 1 or claim 2, in which the saw further comprises a handle to which the blade is attached.
4. A support or saw according to any preceding claim, the saw comprising a handsaw.
5. A support or saw according to any preceding claim, the saw comprising a powered saw in which the saw blade performs a reciprocating motion in use.
6. A support or saw according to claim 5, the saw further comprising a main body containing a motor that powers the saw blade.
7. A support or saw according to any preceding claim, in which the support includes attachment means by which the support is attached or attachable to the saw.

8. A support or saw according to claim 7 when dependent upon claim 3 or claim 6, in which the support is attached or attachable to the handle and/or the main body and/or the blade, of the saw.
9. A support or saw according to claim 7 or claim 8, in which the support is pivotably attached or attachable to the saw.
10. A support or saw according to claim 9, in which the removal of at least part of the support from the blade to facilitate the penetration of the blade into an article being sawn comprises pivoting of the support with respect to the blade.
11. A support or saw according to claim 10 in which the support is pivotable with respect to the blade such that as the blade penetrates into an article being sawn in use, the support rests on the article.
12. A support or saw according to any one of claims 9 to 11, in which the support pivots from the handle or main body of the saw, or from an end region of the blade adjacent to the handle or main body.
13. A support or saw according to any one of claims 9 to 12, in which the support may be fixed in an orientation with respect to the blade in which at least part of the support is removed from the blade and/or in which the entire support is located on the blade.
14. A support or saw according to any preceding claim, in which part of the support may remain located on the blade to support the blade in use while another part of the support is removed from the

blade to facilitate the penetration of the blade into an article being sawn.

15. A support or saw according to claim 9 or any claim dependent thereon, in which the support includes a plurality of pivots such that sections of the support may pivot with respect to the blade.
16. A support or saw according to claim 9 or any claim dependent thereon, in which the support comprises a plurality of parts pivotable from the same pivot point, each part having a different length to that of the (or each) other part.
17. A support or saw according to claim 9 or any claim dependent thereon, in which the support is pivotably attached or attachable to the saw by means of a flexible portion by which the support may pivot with respect to the saw blade.
18. A support or saw according to claim 9 or any claim dependent thereon, in which the support is pivotably attachable to the saw at any of a plurality of pivot points situated on the saw.
19. A support or saw according to any preceding claim, in which the support includes support means that supports the blade in use, thereby reducing flexing of the blade.
20. A support or saw according to claim 19, in which the support means comprises a pair of spaced apart sidewalls defining a slot in which a longitudinal edge of the blade is contained when the support is located on the blade.

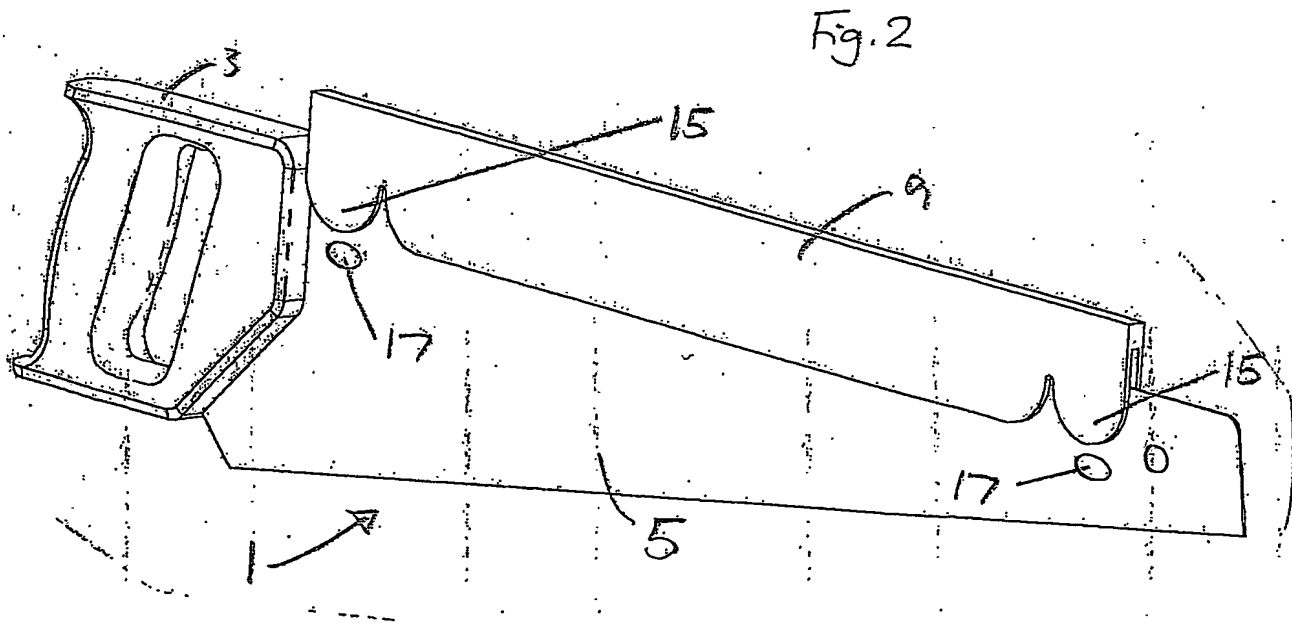
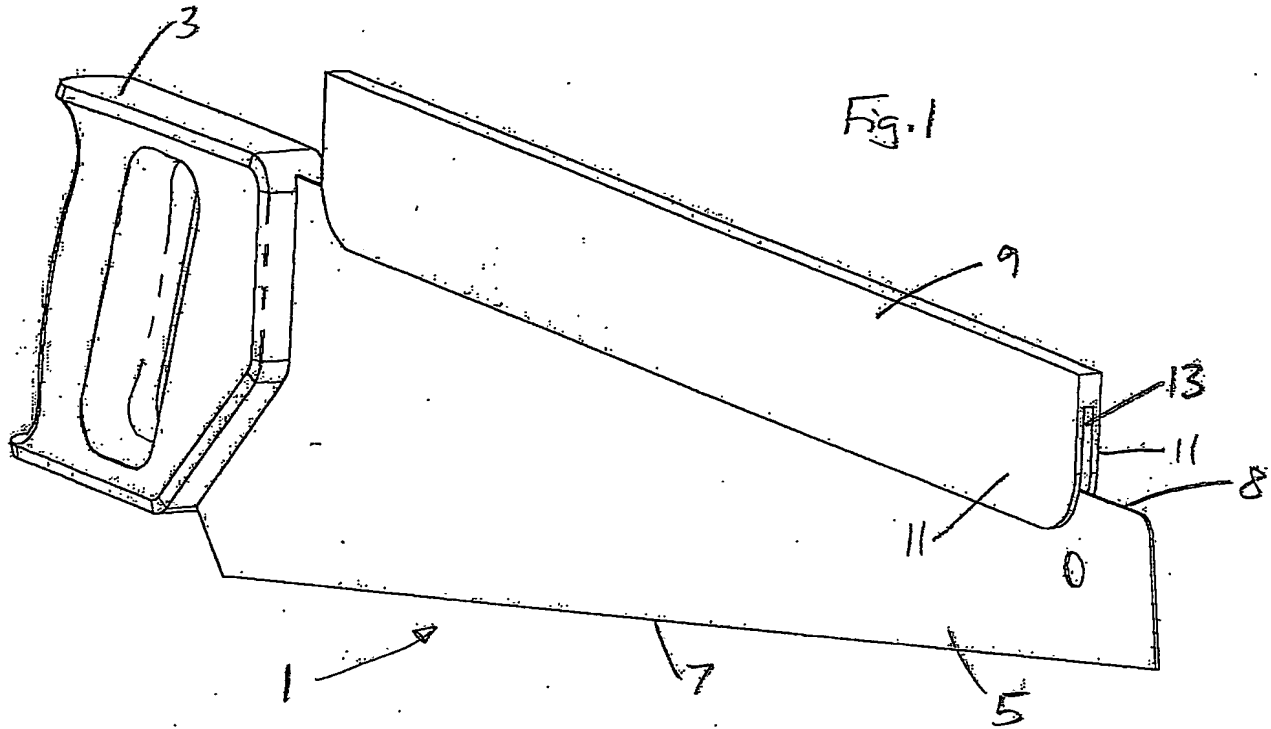
21. A support or saw according to claim 20, in which the longitudinal edge of the blade is a tight fit in the slot.
22. A support or saw according to claim 20 or claim 21, in which the slot includes one or more ribs that support the blade when the support is located on the blade.
23. A support or saw according to claim 19, in which the support means comprises one or more elongate members arranged to be located on the blade by extending along one or both opposite faces of at least part of the length of the blade.
24. A support or saw according to claim 19 or any claim dependent thereon, in which the support means comprises a framework.
25. A support or saw according to any preceding claim, in which the support is locatable on the blade by means of a magnetic attachment to the blade and/or by means of one or more clips.
26. A support or saw according to claim 5 or any claim dependent thereon, in which the support includes friction-reducing means to allow a smooth reciprocating motion by the blade with respect to the support.
27. A support or saw according to any preceding claim, in which the blade of the saw has two cutting edges, the cutting edges being provided on opposite longitudinal edges of the blade, the support being locatable on either cutting edge of the blade in order to support the blade while the other cutting edge of the blade is used to saw an article.

28. A support or saw according to any preceding claim, in which the support includes one or more sawdust vent apertures.
29. A support or saw according to any preceding claim, including a resilient part by which the support is biased to be located on the blade of the saw in use.
30. A support or saw substantially as hereinbefore described and/or substantially as illustrated in the accompanying figures.
31. A kit of parts comprising a plurality of supports according to claim 1 or any one of claims 3 to 30.
32. A kit according to claim 31, further comprising a saw comprising a saw blade on which at least one (preferably only one) of the supports at a time may be located.
33. A kit according to claim 31 or claim 32, in which each of the supports is different to the (or each) other support.
34. A kit according to any one of claims 31 to 33, in which each support has a different length to that of the (or each) other support.

AbstractSaw Blade Support

The invention comprises a saw blade support that can be located on the blade of a saw to reduce flexing of the blade in use, at least part of the support being removable from the blade to facilitate the penetration of the blade into an article being sawn. The support may be pivotally attached or attachable to the saw, and the removal of at least part of the support from the blade to facilitate the penetration of the blade into an article being sawn may comprise pivoting of the support with respect to the blade such that the support rests on the article.

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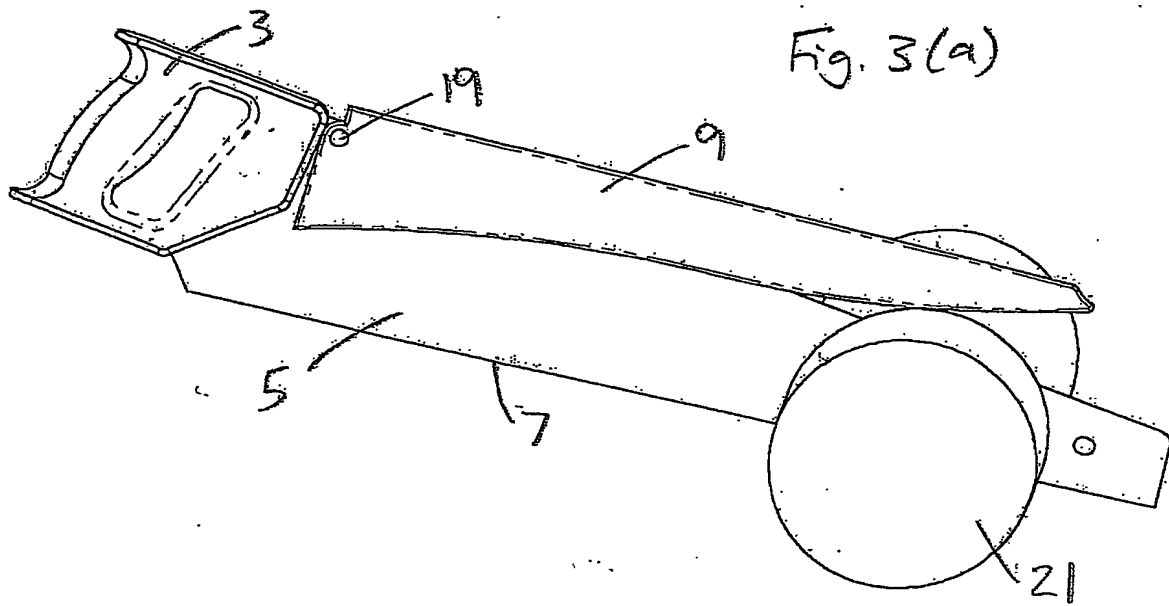
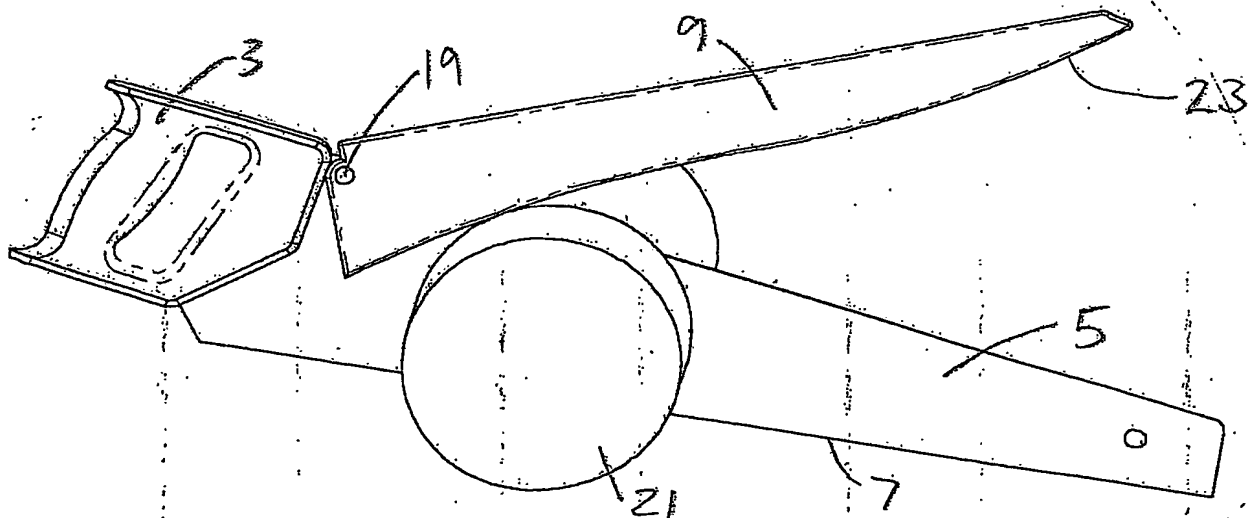


Fig. 3(b)



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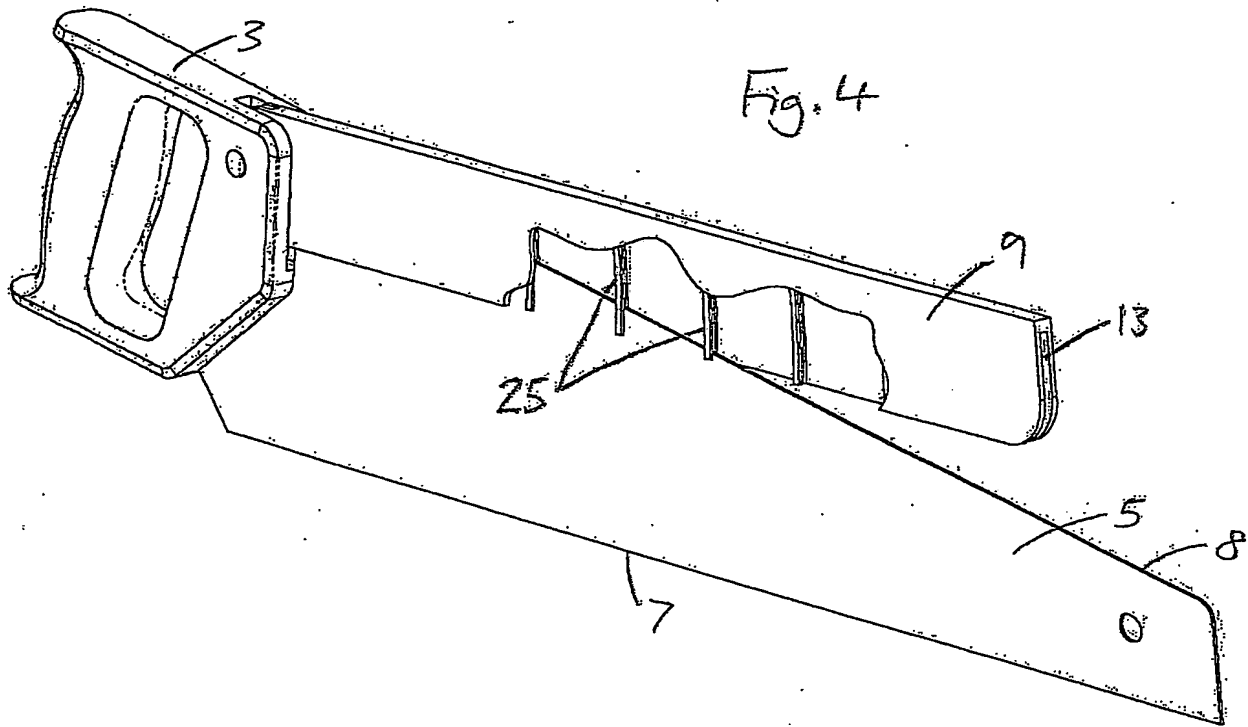
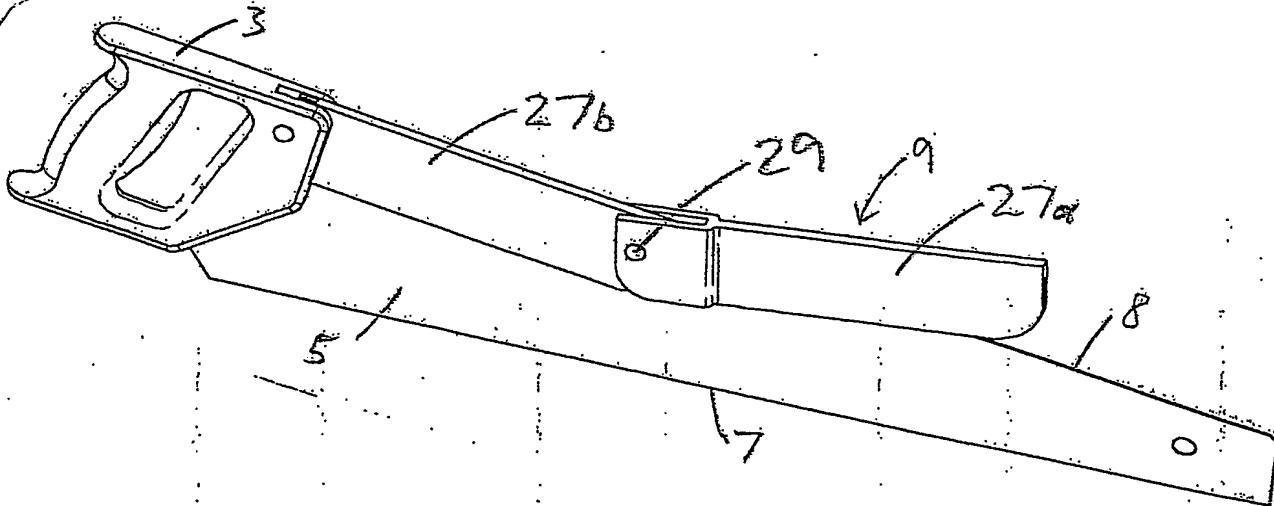
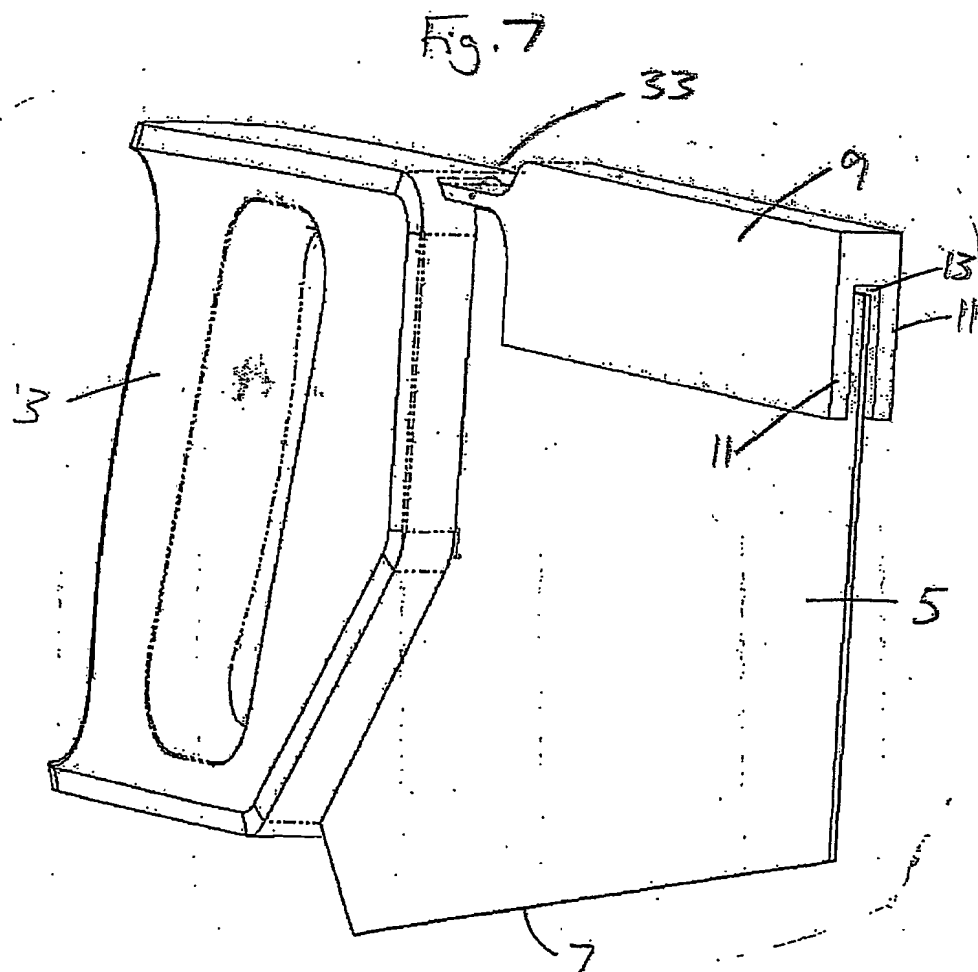
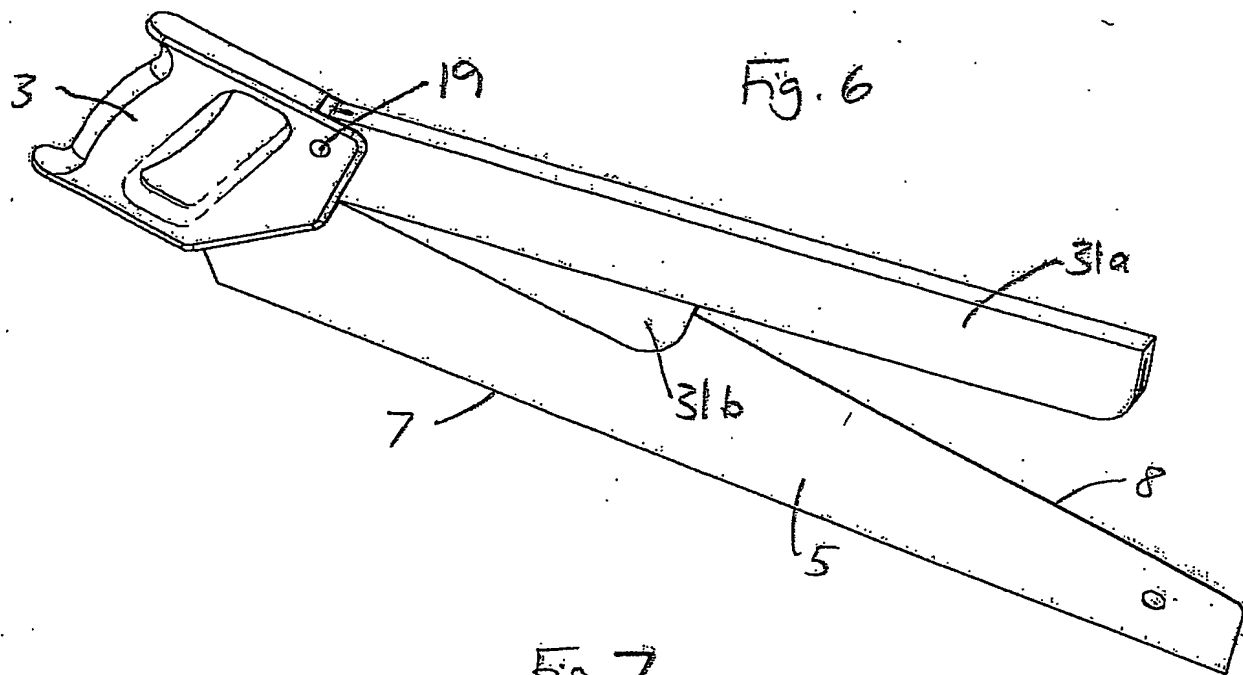


Fig. 5



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Fig. 9(a)

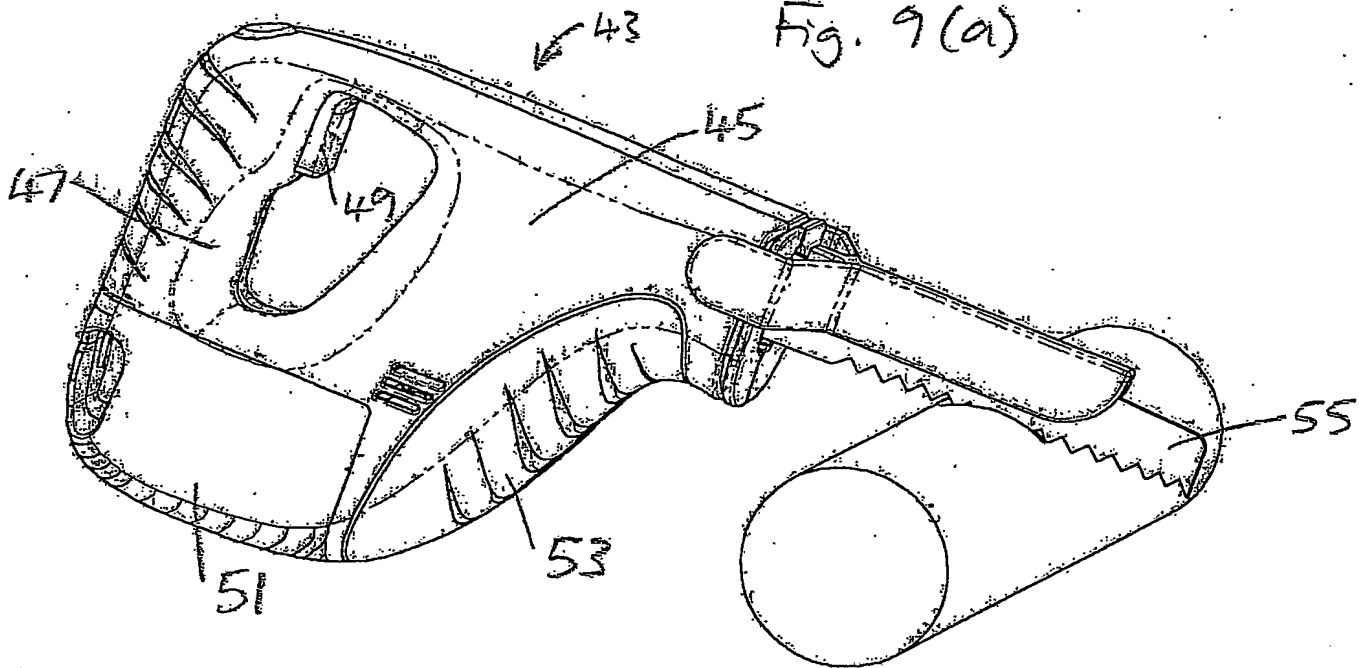
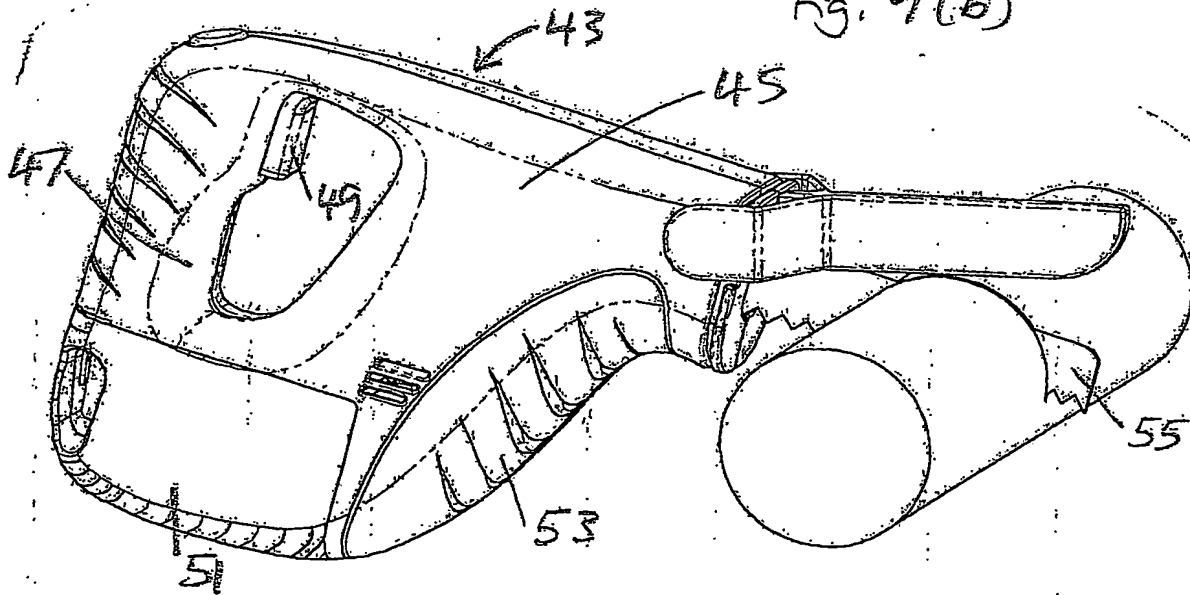
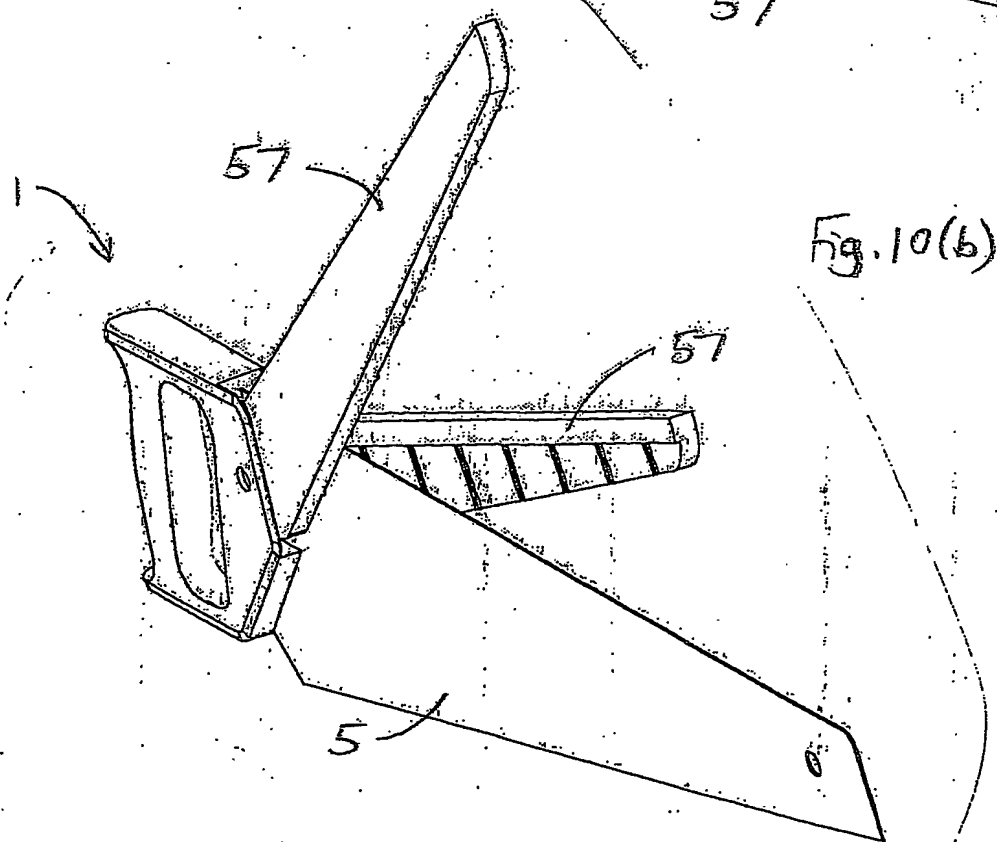
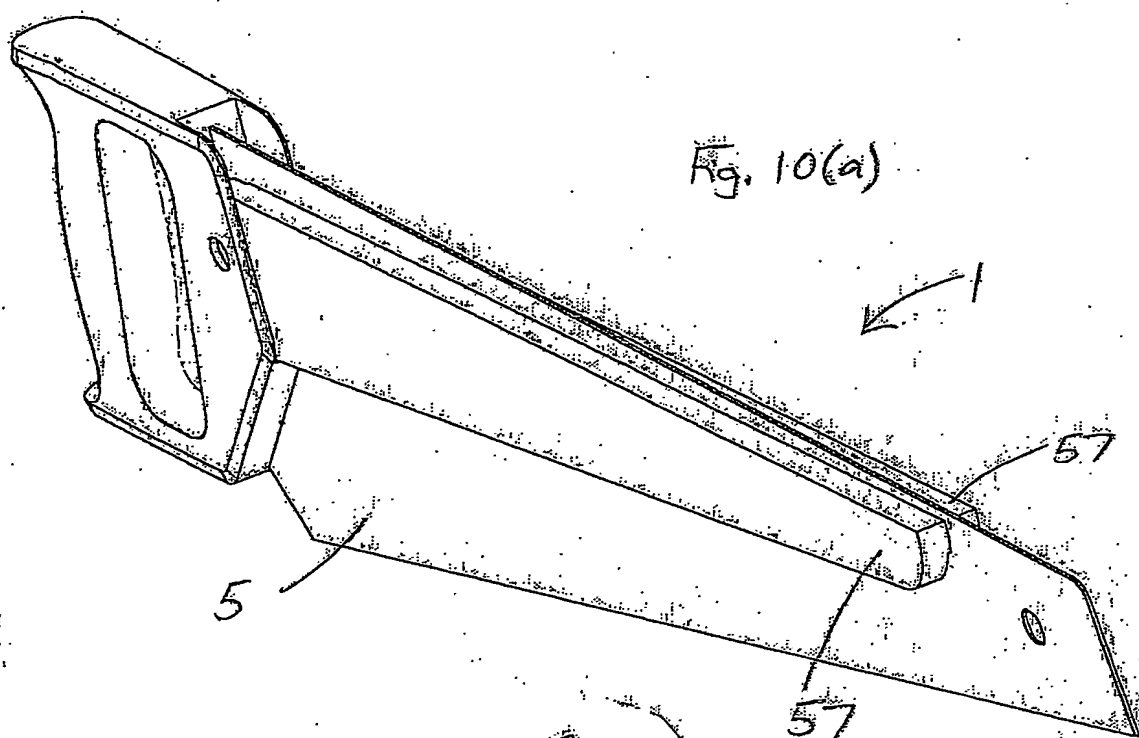


Fig. 9(b)



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